SPECIFICATIONS:

STEPS PER REVOLUTION: 200	ROTOR INERTIA: 120 G–CM ^{2} (0.660Z–IN^2)
STEP ANGLE: 1.8°	HOLDING TORQUE: 4.32KG–CM (60 OZ–IN)MIN [1]
STEP TO STEP ACCURACY: ±5.5% [1], [2]	DETENT TORQUE: 540 G–CM (7.5 OZ–IN)MIN
POSITIONAL ACCURACY: ±5.5% [1], [3]	DYNAMIC TORQUE: 3.02 KG–CM (42 OZ–IN) MIN [10]
HYSTERESIS: %	INSULATION CLASS: B
WINDING RESISTANCE: 1.2 OHM ±10% AT 25° [7]	BEARINGS: ABEC 3 , DOUBLE SHIELDED
WINDING INDUCTANCE:1.25 mH ± 20% [8]	WEIGHT: 510 G (18 OZ) TYP
PHASE VOLTAGE: 2.76 VDC	TEMP. RISE: 80 °C MAX. [9]
PHASE CURRENT: 2.3 AMP (RATED)	OPERATING TEMP. RANGE: –10 TO 40 °C
	STORAGE TEMP. RANGE: –40 TO 70 °C
SHAFT RUNOUT: 0.025 TIR	RELATIVE HUMIDITY RANGE: 5 TO 95 %
RADIAL PLAY: 0.025 MAX W/A .45KG RADIAL LOAD.	
END PLAY: 0.05 MAX W/A .45 KG AXIAL LOAD.	MAX THRUST LOAD: 11.3 KG (25 LB)
DYNAMIC RADIAL LOAD: 7.3kg (16 lb) APPLIED 25.4mm FROM FRONT BEARING AT SPEED OF 3300 STEPS/SEC WITH NO DAMAGE TO BEARING.	

5023–990

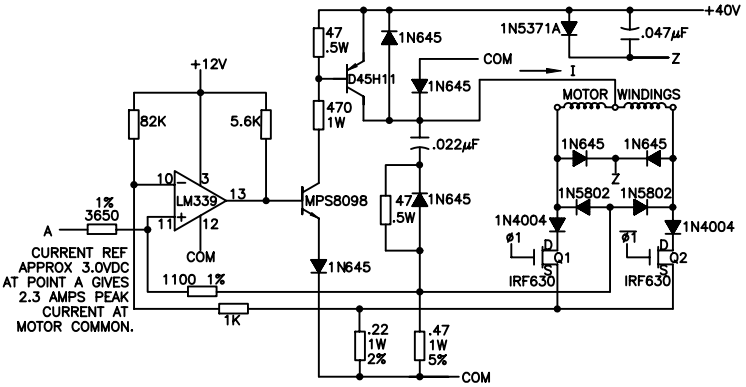
REVISIONS

ECO NO.	REV	DESCRIPTION	DATE	APPROVED
2942	A	INITIAL RELEASE	5–22–85	JK
3161	B	Add sht 2, CHG H.T. & D.T	5–26–87	KK
3193	C	Added detail A, SEE ECO	6–25–87	KK
3270	D	SEE ECO	1–12–88	JD
3337	E	ADDED NOTE 14.	9/27/88	B.Forsyth
3419	F	CHG TOL./ MOUNT'G HOLES	12–1–88	MS
4404	G	REDRAWN ON CAD		
5235	H	ADD EU COMPLIANCE NOTES	09/01/05	R. Hazelwood

NOTES, UNLESS OTHERWISE SPECIFIED:

[1] MEASURMENTS MADE AT RATED CURRENT IN EACH PHASE.
[2] BETWEEN ANY TWO ADJACENT STEP POSITIONS.
[3] MAXIMUM ERROR IN 360°.
4. HIPOT 500 VAC, 60 Hz FOR ONE MINUTE.
5. LEADS: 6 ,AWG 22,7 STRAND MIN.,UL AND CSA APPROVED. MAX O.D. 1.52mm. UL 3265.
6. INSULATION RESISTANCE: 100 MEGOHMS MIN AT 500 VDC.
[7] AS MEASURED ACROSS ANY WINDING.
[8] AS MEASURED ACROSS ANY WINDING USING AN A.C. INDUCTANCE BRIDGE, AT 1KHz.
[9] AS MEASURED BY THE CHANGE IN RESISTANCE METHOD, WITH RATED VOLTAGE APPLIED TO 2 PHASES; WITH MOTOR AT REST.
[10] AT ANY SPEED BETWEEN 200 AND 3300 PPS WHEN DRIVEN BY A 40V CHOPPER DRIVE AT RATED CURRENT. SEE DRIVER AT RIGHT.
11. PULLOUT TORQUE MEASURMENTS TO TEST DYNAMIC TORQUE WILL BE MADE WITH THE MOTOR DRIVEN BY THE POWER CIRCUIT SHOWN AT RIGHT. THE Q1 AND Q2 SIGNALS AND THEIR COMPLEMENTS SHALL BE AS SHOWN IN SCHEMATIC/ SWITCHING SEQUENCE BELOW. THE "ON" CONDITION BEING A +10 TO +12 VOLT SIGNAL, THE "OFF" CONDITION BEING A 0 TO +0.4 VOLT SIGNAL. THE REFERENCE VOLTAGE AT POINT "A" IS TO BE ADJUSTED FOR D45H11 TO TURN OFF WHEN THE CURRENT IN THE MOTOR COMMON LEAD REACHES 2.3 AMP.
12. NO–LOAD MOTOR LOSS TEST: TEST FOR NO–LOAD MOTOR LOSS SHALL BE MADE USING THE DRIVER CIRCUIT SHOWN AT RIGHT. THE D.C. CURRENT SUPPLIED BY THE 40V SUPPLY SHALL NOT EXCEED 1.0 AMP WHEN THE MOTOR IS OPERATED WITH NO LOAD ON THE OUTPUT SHAFT, AT ANY STEP RATE FROM 400 TO 3300 STEPS/SEC WITH THE CURRENT REFERENCE SET FOR 2.3 AMPS PEAK IN THE MOTOR COMMON LEAD.

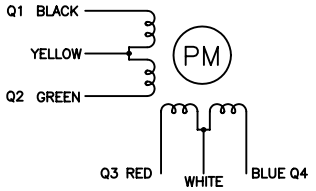
1/2 POWER DRIVER. REPEAT FOR ø2, $\overline{ø2}$ (Q3 AND Q4)



ALL RESISTORS 1/4 WATT, ±5% UNLESS OTHERWISE NOTED.

SWITCHING SEQUENCE FOR CW ROTATION FACING MOUNTING END

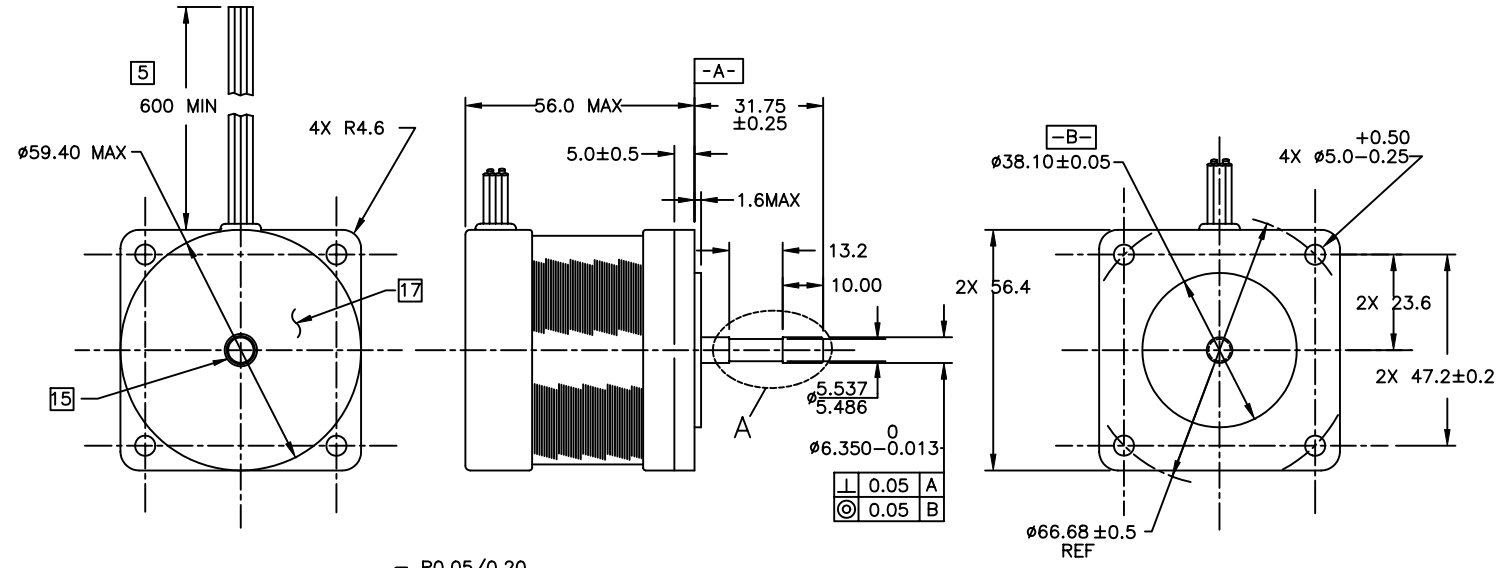
STEP	BLACK	GREEN	RED	BLUE
0	ON	OFF	ON	OFF
1	OFF	ON	ON	OFF
2	OFF	ON	OFF	ON
3	ON	OFF	OFF	ON
4	ON	OFF	ON	OFF

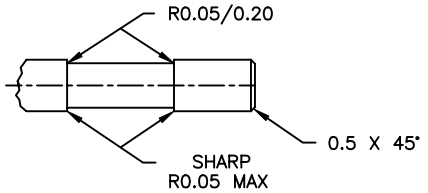


CONTRACT NO. GM 44A501711–001/11		APPLIED MOTION PRODUCTS, INC.	
APPROVALS	DATE	STEP MOTOR OUTLINE	
DRAWN JK	5/21/85		
CHECKED R. Barrick	3–26–87	B COMPUTER DATA BASE DRAWING	DWG NO. 5023–990 REV H
APPROVED			
APPROVED		SCALE: 1=1	SHEET 1 OF 2

NOTES, CONTINUED FROM SHEET 1:

13. ROTOR TO BE LAMINATED CONSTRUCTION TO MINIMIZE EXCITATION LOSSES.
14. ADD –1 TO DATE CODE FOR NEW WINDING.
[15] BLIND END OF SHAFT MUST BE ACCESSABLE SO THAT SHAFT CAN BE SUPPORTED WHEN PRESSING ON PULLEY.
16. MARK SHIPPING CONTAINER WITH NUMBER 44A501711.
[17] MARK MOTOR WITH CUSTOMER NUMBER 44A501711.
18. THIS MOTOR TO BE MANUFACTURED IN COMPLIANCE WITH EU DIRECTIVE "ROHS 2002/95/EC".
19. MOTOR LABEL TO INCLUDE "ROHS" COMPLIANT.





DETAIL A
SCALE: 2=1

TOLERANCES	THIRD ANGLE PROJECTION	APPLIED MOTION PRODUCTS, INC.	
DECIMALS: MM (INCH) X.XXX= ±0.01 (.005) X.XX = ±0.10 (.010) X.X = ±0.20 (.020) ANGLES: MACH. = ±.5° CHAM. = ±5°	APPROVALS / DATE DRAWN R. BARRICK 5/10/90 CHECKED KK 6–25–87 APPROVED	STEP MOTOR OUTLINE	
COMPUTER DATA BASE DRAWING		B DWG NO. 5023–990 REV H	
		SCALE: FULL	SHEET 2 of 2